


































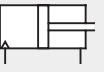

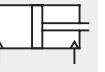
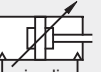

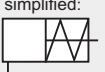
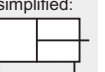
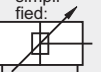

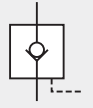














Circuit symbols						cf. DIN ISO 1219-1 (1996-03)	
Function elements							
	Hydraulic fluid flow		Direction of flow		Direction of rotation		Spring
	Compressed air flow				Adjustability		Flow restriction
Power transmission							
	Hydraulic pressure source		Line junction		Muffler Tank		Filter or screen
	Pneumatic press. source		Line crossing		Pressure tank		Water separator
	Working line		Quick coupling		Hydraulic accumulator		Air dryer
	Control line Leakage current line		Exhaust without connection		Service unit (FRL)		Lubricator
	Envel. around subassemblies		Exhaust with connection				
Pumps, compressors, motors							
	Fixed displacement hydraulic pump, unidirectional		Fixed displacement hydraulic motor, unidirectional		Variable displacement hydraulic motor, bidirectional		Hydraulic rotary drive
	Variable displacement hydraulic pump, bidirectional		Fixed displacement pneumatic motor, unidirectional		Variable displacement pneumatic motor, bidirectional		Pneumatic rotary drive
	Compressor, unidirectional				Electric motor		
Single-acting cylinders			Double-acting cylinders				
	Single-acting cylinder, return stroke by undefined power source		Single-acting cylinder, return stroke by integrated spring		Double-acting cylinder with one-sided piston rod		Double-acting cylinder with one-sided piston rod and two-sided adjustable end cushion
	simplified:		simplified:		simplified:		simplified:
Shut off valves			Pressure valves		Flow control valves		
	Check valve, unloaded		Pilot operated check valve		Pressure relief valves		Adjustable throttle valve
	Check valve, spring loaded		One-way flow control valve		Sequence valve		2-way flow-control valve with variable output
	Shuttle valve (OR function)		Dual-pressure valve (AND function)		2-way pressure regulator, direct-acting		3-way flow-control valve with variable output, relief opening to tank
	Quick exhaust valve				Pressure switch, emits electrical signal for a preset pressure		

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